

Marine Corps Systems Command



Engineer Development & Certification Program

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Purpose

The purpose of this document is to define the development and certification program for engineers within the Marine Corps Systems Command (MARCORSYSCOM) to ensure competitiveness, mastery of engineering and related competencies, as well as career growth. This document provides an integrated framework to assess the education, training, and experience of engineers ranging from the entry-level to the most experienced and senior level engineers. By defining these characteristics, it serves as an internal roadmap for Command managers and the Engineering Community of Interest to ensure engineers are adequately prepared to perform the systems/software engineering functions.

The document defines the development and certification requirements at the Command level. As such, it is intended to be supplemented by the individual product groups to reflect their unique development needs of engineers focusing on the unique engineering needs of their products.

This document is under the auspices of the Engineer Functional Integration Team (FIT) who will manage and update it as necessary. In the event that a stakeholder (the engineer, his or her supervisor and the SBT engineer) disagrees with an assessment of an individual engineer, the matter will be forwarded to the Assistant Commander, Engineering for final disposition.

Introduction

The MARCORSYSCOM Engineer Development and Certification Program addresses policy for the education, training and experience of engineers in the MARCORSYSCOM. As such, it addresses these education, training and experience requirements in a broad way and is intended to be supplemented to reflect the needs of engineers as they focus and specialize on the several commodity areas across the Command. The SBT Lead Engineer in each Product Group will identify training that supports the needs of the Product Group. For example, an engineer working in the Information Technology intensive area naturally requires a different cadre of skills and training than an engineer working primarily with ammunition and artillery.

Each individual brings a unique set of skills and abilities to every situation. In order to be effective, and indeed relevant, a fundamental expectation that underlies the MARCORSYSCOM Engineer Development and Certification Program is that an Individual Development Plan (IDP) will be developed by the engineer in collaboration with the respective SBT lead engineer and supervisor that reflects the spirit and intent of the provisions of this program, the technical needs of the commodity area within which the engineer is working and the needs and circumstances of the individual.

Engineers in the MARCORSYSCOM are certified at three levels – A, B, and C. Additionally, engineering technicians in MARCORSYSCOM are also covered by this Development and Certification program. The MARCORSYSCOM Engineer Development and Certification Program defines engineering technicians (NJ-0802-III) at Level D.

This handbook does not distinguish between assignments and hiring actions. Assigning a MARCORSYSCOM engineer to a position is considered an assignment. When a hiring action is required to fill an engineering vacancy, the factors in this handbook should be considered when defining knowledge, skills and abilities for the vacancy announcement. In this way, the MARCORSYSCOM Engineer and Development Certification program is fully integrated with existing hiring policies, procedures and requirements.

While this handbook has no direct applicability to the many members of the MARCORSYSCOM engineering team who provide contract engineering support to the Command, the levels and associated factors can easily be applied to the contracting workforce.

The role of engineers at each Certification Level is defined below:

Level D:

Engineering technicians (NJ-0802-III) provide critical hands-on engineering expertise. They often have a practical, technical background related to military systems and equipment.

Level C:

Engineers at Level C meet the Individual Occupational Requirements (IOR) for the GS-0801 General Engineering Series per Section IV-B of the OPM Qualification Standards Operating Manual. These engineers are given specific engineering assignments and their work activities are closely monitored and guided by a more experienced engineer. This level would include engineering interns. Their work and training assignments must be balanced such that they gain both engineering experience and a familiarity with Marine Corps operations and equipment. Some emphasis should be on the Marine Corps environment and the engineering constraints imposed by the way acquisition is executed in the Marine Corps.

Level B:

Engineers at Level B meet the Individual Occupational Requirements (IOR) for the GS-0801 General Engineering Series per Section IV-B of the OPM Qualification Standards Operating Manual and may have an advanced degree in engineering or in another field. Engineers at Level B are often systems engineers for one or more acquisition program/s. These individuals function with considerable autonomy and responsibility. Their day-to-day work assignments and products are often not reviewed from a technical perspective. They develop their own approach and methodologies to solve engineering problems with little or no technical supervision. The results of their engineering analysis are very often integrated into the overall acquisition program.

Engineers at Level B spend a considerable amount of time describing the results of their engineering analysis and problem solving to non-engineers. This requires skill and dexterity in both verbal and written communications, as well as team and interpersonal skills. They become increasingly involved with the “non-technical” aspects of the program, such as project management, Program Objectives Memorandum (POM), budgeting, contracting, and scheduling.

Level A:

Engineers at Level A meet the Individual Occupational Requirements (IOR) for the GS-0801 General Engineering Series per Section IV-B of the OPM Qualification Standards Operating Manual and may have an advanced degree in engineering or in another field. Engineers at Level A are the most qualified and experienced engineers in the MARCORSYSCOM. These individuals function with considerable autonomy and responsibility. Their day-to-day work assignments and products are usually not reviewed from a technical perspective. They develop their own approach and methodologies to solve engineering problems with little or no technical supervision. The results of their engineering analysis are integrated into the overall acquisition program.

Engineers at Level A spend a considerable amount of time describing the results of their engineering analysis and problem solving to non-engineers. This requires considerable skill and dexterity in both verbal and written communications, as well as team and interpersonal skills. They routinely are engaged in the non-technical aspects of the program, such as project management, POM, budgeting, contracting, and scheduling.

Critical Engineering Positions

Engineers in the MARCORSYSCOM fill a variety of positions focusing on a range of engineering and management tasks. The Assistant Commander, Engineering with the advice of the Engineering Functional Integration Team, designates select positions as Critical Engineering positions. This designation takes into account several factors including:

- Engineering complexity and risk
- Extent and number of interfaces, C4I and otherwise
- Extent of integration
- Program visibility

These Critical Engineering positions will be filled only by Level A engineers in accordance with the following procedures when being assigned from within MARCORSYSCOM:

1. The Engineering FIT will solicit nominations.
2. The Engineering FIT will develop selection criteria in conjunction with the affected Program Manager to include Level A certification as well as any program-specific requirements.
3. The Engineering FIT will, with concurrence of the affected Program Manager, make recommendations to the Assistant Commander, Engineering.
4. The Engineering FIT will draft a Charter outlining the assignment to include duration and authority of the assignment for signature by the Assistant Commander, Engineering and the individual engineer.

When a hiring action is required to fill a Critical Engineering vacancy, the factors in this handbook should be considered when defining knowledge, skills and abilities for the vacancy announcement.

Factors

Individual engineers are assigned to the levels outlined above by considering their education, training and experience in accordance with the following evaluation criteria. SBT lead engineers have a responsibility to assess the development and certification of individual engineers. These assessments are then reviewed and endorsed by the supervisor and subsequently forwarded to the Engineering FIT.

Engineers in the MARCORSYSCOM are measured against three factors: education, training and experience. Engineers are assessed against the criteria in each of these areas as outlined below and a point value is assigned for each of these three areas.

Score

Education (2, 3, 4)

Training (1, 2, 3, 4)

Experience (1, 2, 3, 4)

Total:

Individuals are then assigned to an overall Certification Level (A, B, or C) based on their overall score.

Level A – 10 to 12

Level B – 8 to 9

Level C – 2 to 7

Factor Descriptions

Training:

	Training	Education	Experience
4			
3			
2			
1			

A training score of 1 applies to an individual who has completed required Defense Acquisition Workforce Improvement Act (DAWIA) level I certification in the Systems Planning, Research, Development and Engineering (SPRDE) career field.

	Training	Education	Experience
4			
3			
2			
1			

A training score of 2 applies to an individual who has achieved required Defense Acquisition Workforce Improvement Act (DAWIA) level II certification in the Systems Planning, Research, Development and Engineering (SPRDE) career field.

Engineers at this level have been trained in the following core systems engineering competencies and skills, including:

1. Systems Engineering Process
2. Systems Engineering Planning
3. Technology Insertion
4. Risk Management
5. Trade Studies
6. Configuration Management
7. Cost Containment
8. Technical Reviews
9. Environmental, Safety, and Occupational Health (ESOH)

	Training	Education	Experience
4			
3			
2			
1			

A training score of 3 applies to an individual who has achieved required DAWIA level III certification in the SPRDE career field.

Additionally, training at this level is based on their IDP and professional development objectives. Individuals at this level may opt for certification in other DAWIA career fields: Acquisition

Logistics; Auditing; Business, Cost Estimating and Financial Management; Contracting; Facilities Engineering; Industrial and/or Contract Property Management; Information Technology; Manufacturing, Production and Quality Assurance; Program Management; Purchasing; Science and Technology; Test and Evaluation. Training at this level may also include training in various specialty or commodity specific areas and attending professional conferences.

Engineers at this level have been trained in the following core systems engineering competencies and skills, including:

1. Systems Engineering Process
2. Systems Engineering Planning
3. Technology Insertion
4. Risk Management
5. Trade Studies
6. Configuration Management
7. Cost Containment
8. Technical Reviews
9. Environmental, Safety, and Occupational Health (ESOH)

	Training	Education	Experience
4			
3			
2			
1			

A training score of 4 applies to an individual who has achieved required DAWIA level III certification in the SPRDE career field. Additionally, individuals at this level have achieved certification in at least one other DAWIA career field: Acquisition Logistics; Auditing; Business, Cost Estimating and Financial Management; Contracting; Facilities Engineering; Industrial and/or Contract Property Management; Information Technology; Manufacturing, Production and Quality Assurance; Program Management; Purchasing; Science and Technology; Test and Evaluation.

Engineers at this level often receive training in focused technical or management areas related to the needs of their project or commodity area. Engineers at this level should continue to pursue technical expertise and remain current as technology changes. Engineers at this level have been trained in the following core systems engineering competencies and skills, including:

1. Systems Engineering Process
2. Systems Engineering Planning
3. Technology Insertion
4. Risk Management
5. Trade Studies
6. Configuration Management
7. Cost Containment
8. Technical Reviews
9. Environmental, Safety, and Occupational Health (ESOH)

Education:

	Training	Education	Experience
4			
3			
2			
1			

An education score of 2 applies to those engineers with a Bachelor of Science Degree that meets the IOR for the GS-0801 General Engineering Series.

	Training	Education	Experience
4			
3			
2			
1			

An education score of 3 applies to those engineers who meet the level 2 criteria and possess a Masters degree that meets the IOR for the GS-0801 General Engineering Series.

	Training	Education	Experience
4			
3			
2			
1			

An education score of 4 applies to those engineers who meet level 2 criteria and have either a Doctoral degree that meets the IOR for the GS-0801 General Engineering Series, more than 1 Masters degree, or a Masters degree in a specialized field of study directly related to the requirements of their position.

Experience:

	Training	Education	Experience
4			
3			
2			
1			

An experience score of 1 applies to individuals who have practical, hands-on engineering experience, but limited experience with the Marine Corps. Individuals at this level contribute to engineering in the MARCORSYSCOM by performing very specific and well-defined tasks under the close supervision of a more experienced engineer.

These individuals are given specific engineering assignments and their work activities are closely monitored and guided by a more experienced engineer. This level would include engineering interns. Engineers at this level are rapidly gaining experience in various engineering and engineering-related areas by participating in a variety of rotational and work assignments.

	Training	Education	Experience
4			
3			
2			
1			

An experience score of 2 applies to engineers who tend to be focused on a single or narrowly defined group of weapon systems and equipment. These engineers are beginning to apply their engineering skills to solve program problems and address engineering issues. Therefore, an additional goal for these individuals is to develop an understanding and appreciation of the

use and operations of weapon systems and equipment within their product area.

	Training	Education	Experience
4			
3			
2			
1			

An experience score of 3 applies to engineers who are considered journeyman engineers and are often systems engineers for one or more acquisition programs. These individuals function with considerable autonomy and responsibility. Their day-to-day work assignments and products are often not reviewed from a technical perspective. They develop their own approach and methodologies to

solve engineering problems with little or no technical supervision. The results of their engineering analysis are very often integrated into the overall acquisition program.

Engineers at this level have an impressive range and depth of experience in engineering and engineering-related problems. They have served on several technical and program management teams. They have a deep appreciation of engineering principles and

practices. They possess, through experience and observation, an appreciation of the use of selected weapon systems and equipment in the Marine Corps.

Engineers at this level are masters at describing the results of their engineering analysis and problem solving to non-engineers. They have considerable skill and dexterity in both verbal and written communications, as well as team and interpersonal skills. They are conversant in non-technical aspects of the program, such as project management, POM, budgeting, contracting, and scheduling.

	Training Education Experience		
4			
3			
2			
1			

An experience score of 4 applies to engineers who are considered seasoned engineers and are often a systems engineer for one or more acquisition programs. These individuals function with considerable autonomy and responsibility. Their day-to-day work assignments and products are often not reviewed from a technical perspective. They develop their own approach and methodologies to solve engineering problems with little or no technical supervision. The results of their engineering analysis are very often integrated into the overall acquisition program.

Engineers at this level have an impressive range and depth of experience in engineering and engineering-related matters. They have served on several technical and program management teams. They have a deep appreciation of engineering principles and practices. They possess, through experience and observation, an appreciation of the use of selected weapon systems and equipment in the Marine Corps.

Engineers at this level are masters at describing the results of their engineering analysis and problem solving to non-engineers. They have considerable skill and dexterity in both verbal and written communications, as well as team and interpersonal skills. They are conversant in non-technical aspects of the program, such as project management, POM, budgeting, contracting, and scheduling.

Engineers at this level may be assigned as the systems engineer on highly technical and complex MARCORSYSCOM acquisition programs. As such, engineers at this level possess an impressive breadth and depth of engineering expertise and experience.

APPENDIX A

Engineer Certification Level Worksheet

This worksheet is intended to document the certification level of engineers within the Marine Corps Systems Command. Three factors are considered in order to make this determination: education, training and experience. Points reflected in each area are then totaled in order to determine the cumulative certification score.

Name: _____

Position: _____

SBT Engineer (Assessor): _____

Supervisor Endorsement: _____

Factors:

Education (2, 3, 4) _____

Training (1, 2, 3, 4) _____

Experience (1, 2, 3, 4) _____

Total: _____

Level:

A – 10 to 12

B – 8 to 9

C – 2 to 7

APPENDIX B

Critical Engineering Position Charter Template

Systems Engineering

[insert program name]

Subj: ASSIGNMENT OF SYSTEMS ENGINEERING FOR THE **[insert program name]**

1. Purpose: This charter outlines the authority and responsibility for the critical position of Systems Engineer for **[insert program name]** in the Marine Corps Systems Command.
2. Background:
 - a. The Systems Engineer for the **[insert program name]** has been designated as a critical program from an engineering perspective by the Assistant Commander, Systems Engineering because of several factors including: engineering complexity and risk; extent and number of interfaces, C4I and otherwise; extent of integration; as well as a high degree of program visibility.
 - b. Experience has demonstrated that the assignment of the Systems Engineer is critical to program success. A highly qualified, experienced and motivated engineer with interpersonal and team skills to identify and engage and subsequently resolve the several engineering problems and issues in order to help improve the probability of program.
3. Assignment: This Charter formally assigns **[insert individual's name]** as the Systems Engineering for the **[insert program name]**. **[insert individual's name]** will have the authority to guide, analyze, evaluate, direct, and close the myriad of engineering and technical matters that arise on the **[insert program name]**. **[insert individual's name]** will be aware and responsive to the overall needs of the program to help the program team and the program succeed as well as the Assistant Commander, Engineering and the Lead Engineer in their efforts to ensure sound engineering practices.
4. Duration: This assignment is determined upon [insert either a date or a program event].

Mr. Robert L. Hobart Date
Assistant Commander, Engineering
Marine Corps Systems Command

[insert individual's name] Date
Systems Engineer, **[insert program name]**
Marine Corps Systems Command